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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,188	08/21/2003	Jun-Ho Koh	5000-1-421	7067
33942	7590	09/26/2006	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			TARANINA, MARINA Y	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/645,188	<b>Applicant(s)</b> KOH ET AL.	
	<b>Examiner</b> Marina Taranina	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 Aug 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>21 Aug 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

### ***Claim Objections***

2. Claims 5, 6(6/5) and 7(7/6/5) are objected to because of the following informalities: misspelling (claim 5 line 4 recite "demultiplexed" instead of "demultiplexed"). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lehman (US 4,763,317).

(1) With respect to Claim 1, Lehman discloses a system for integrating broadcast and communication technologies, comprising:  
an optical-line terminal (OLT) (110 in fig. 1) for receiving at least one digital-broadcast signal (CATV, col. 2 lines 27-30, col. 7 lines 11-15) and at least one external data-

communication signal (data transport) (col. 2 lines 27-30, col. 7 lines 11-15), for converting the received signals (608 in fig. 10, col. 26 lines 51-64) for combining the converted signals in the form of an optical signal (output of 604 in fig. 10), and transmitting the optical signal (output of 110 in fig. 1) according to an optical wavelength-division multiplexing (WDM) (abstract, lines 18-22); an optical-network unit (ONU) (103 in fig. 1) for separating the optical signal transmitted from the OLT into the broadcast signal (505 in fig. 9) and the communication signal (506 in fig. 9) and transmitting the broadcast signal selected by a user (col. 19 line 35-40) and the communication signal (col. 19, lines 55-58) in a predetermined time slot (col. 19 lines 58-61, col. 22 lines 57-61); a user gateway (104 in fig. 1) for distributing the optical-signal output from the ONU (103 in fig. 1) to the user (102 in fig. 1) (abstract, lines 9-11).

(2) With respect to Claim 3, Lehman discloses the system as set forth in claim 1, wherein the user gateway (104 in fig. 1) is further operative to transmit upstream data sent by the user (102 in fig. 1) to the ONU (103 in fig. 1) (col. 12 lines 13-15, col. 15 lines 44-46).

(3) With respect to Claim 4, Lehman discloses the system as set forth in claim 1, wherein the ONU (103 in fig. 1) is further operative to process upstream data sent by the user (col. 17 lines 65-68, col. 18 lines 45-50).

(4) With respect to Claim 5, Lehman discloses the system as set forth in claim 1, wherein the ONU (103 in fig. 9) comprises:

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a WDM optical demultiplexer for demultiplexing the signal output from the OLT (508a in fig. 9, col. 20 lines 33-36);

a broadcast-signal processor (508a, 505 and 507 in fig. 9) for converting the digital-broadcast signal (wideband signal) demultiplexed by the WDM optical demultiplexer opto-electrically (col. 20 lines 36-44);

a zapping-protocol processor (505 and 507 in fig. 9) for outputting information of at least one channel selected by the user from the signal output from the broadcast-signal processor (col. 19 lines 35-43, 46-50);

a switch (502 and 506 in fig. 9) for opto-electrically converting the communication signal demultiplexed by the WDM optical demultiplexer (508a in fig. 9), for electro-optically converting upstream information from the user (503b in fig. 9, col. 18 lines 45-50) to transfer the converted upstream information to the OLT (col. 19 lines 55-58), and for transferring the at least one channel selected by the user to the zapping-protocol processor (505 in fig. 9)

a convergence unit (500 in fig. 9) for outputting, in the form of the time slot-based optical signal (time-division multiplexed signal on fibers 105, col. 13 lines 52-55), the signal selected by the user and outputted from the zapping-protocol processor (505 and 507 in fig. 9) and the communication-signal output from the switch (502 and 506 in fig. 9).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman (US 4,763,317) in view of Lin (US 2002/0093969).

(1) With respect to claim 2, Lehman discloses all the subject matter as recited in claim 1, but fails to specify that OLT multiplexes the broadcast signal into synchronous-digital-hierarchy (SDH)/synchronous-optical-network (SONET) signal based on time-division multiplexing (TDM) and that the OLT multiplexes communication signals into Gigabit-Ethernet signal.

However, Lin teaches the OLT (central office) which is capable of simultaneously transmitting multiplexed data in both SONET and Gigabit-Ethernet formats (page 1 para 0009, lines 11-19, 23-26).

It is desirable to simultaneously transmit broadcast signals as SONET signals based on time-division multiplexing and communication signals as Gigabit-Ethernet signals because it allows providing of real time high quality broadcast/data transmission applications (page 2 para 0020). It also gives more flexibility to a user by allowing the user to change the allocated bandwidth, timeslots or clock cycles on request (page 3 para 0036 lines 27-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to include OLT access device as taught by Lin into the system of Lehman as to give more flexibility to a user and to allow providing of real time high quality broadcast/data transmission applications.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman (US 4,763,317) in view of Williams (US 5,808,767) and Ovadia (US 6,400,720).

(1) With respect to Claim 6, Lehman discloses all the subject matter as set forth in claim 5, but fails to teach (A) that the broadcast-signal processor and WDM optical demultiplexer operate over a SDH/SONET transport network.

However, Williams teaches (A) the broadcast-signal processor (607 and 604 in fig. 6) and WDM optical demultiplexer (603 in fig. 6) operating over a SONET transport network (col. 13 lines 64-66, col. 14 lines 51-58, col. 15 lines 1-13, 21-23).

It is beneficial to use SONET transport network in integrated services networks. The reason for that is that SONET network elements can support and process signals from a variety of providers, as well as accomodate bandwidth requirements and quality of service.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use SONET transport network as taught by Williams into the system of Lehman as to provision support and processing of signals from a variety of providers, and to accomodate bandwidth requirements and quality of service.

Further, Lehman and Williams fail to teach (B) the broadcast-signal processor that processes the opto-electrically converted signal on the basis of an MPEG2 multi-

program transport stream (MPTS) before further processing in the zapping-protocol processor.

However, Ovadia teaches (B) the broadcast-signal processor (21 in fig. 2) that processes the opto-electrically converted signal on the basis of an MPEG2 multi-program transport stream (MPTS) (col. 4 lines 5-11) before further processing in the zapping-protocol processor (23 in fig. 2, col. 4 lines 26-34).

It is advantageous to use MPEG2 multi-program transport stream (MPTS) because it allows to realize HDTV (high definition TV) picture by providing a way to compress the digital video signal to a manageable bit rate: an uncompressed HDTV picture requires a raw bandwidth exceeding 1 Gbps, however, MPEG2 compressed signal for broadcast HDTV requires only 12-20 Mbps.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use MPEG2 multi-program transport stream (MPTS) as taught by Ovadia into the system of Lehman and Williams as to realize high quality HDTV while effectively managing the bandwidth.

(2) With respect to Claim 7, Lehman discloses all the subject matter as set forth in claims 5 and 6, but fails to teach that the SDH/SONET optical signal is a synchronous-transfer mode (STM)-n or synchronous-transfer-signal level (STS)-n signal.

However, Williams teaches the SDH/SONET optical signal that is a synchronous-transfer-signal level (STS)-n signal (col. 13 lines 33-39).



It is desirable to transmit SDH/SONET optical signal as a synchronous-transfer-signal level (STS)-n signal. By providing dynamic allocation of STS frames the system allows SONET technology to efficiently carry both data and voice traffic by add/drop multiplexing of both isochronous traffic, such as voice and video, and non-isochronous traffic, such as data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lehman's system by transmitting SDH/SONET optical signal as a synchronous-transfer-signal level (STS)-n signal as taught by Williams as to allow SONET technology to efficiently carry both data and voice traffic by add/drop multiplexing of both isochronous traffic, such as voice and video, and non-isochronous traffic, such as data.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lehman (US 4,763,317) in view of Williams (US 5,808,767).

With respect to Claim 8, Lehman discloses the system as set forth in claim 1, wherein the user gateway (fig. 8) comprises:

an input/output unit for opto-electrically converting the optical signal from the ONU and electro-optically converting upstream information from the user and transmitting the converted upstream information to the ONU (410 and 412 as a part of 104 in fig. 8, col. 15 lines 44-51, 55-59);

a distributor (400 in fig. 8) for distributing the broadcast signal to an external broadcast receiver (TV A in fig. 8) and outputting the communication signal to a communication processor (401 in fig. 8)

the communication processor (450, 453 and 451 in fig. 8) for transferring the communication signal to the user (col. 16 lines 60-65 and col. 17 lines 1-5) and transferring the upstream information from the user to the input/output unit (104 in fig. 8) (col. 17 lines 8-22);

a user-input unit (460 in fig. 8) for transferring information indicative of at least one broadcast channel selected by the user to the input/output unit (col. 16 lines 38-49).

Lehman fails to teach a time-slot separator, main function of which is separating the signal output from the input/output unit into the broadcast signal and the communication signal.

However, Williams teaches a time-slot separator (911 in fig. 9) for separating the signal output from the input/output unit (908 in fig. 9) into the broadcast signal and the communication signal (by management function of the unit 911 – col. 16 lines 51-54, lines 42-50).

It is desirable to use a time-slot separator for separating the signal into the broadcast signal and the communication signal. The reason for that is that it allows to dynamically allocate bandwidth to a user in cases of quick changes of service or the bandwidth requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lehman's system by using a time-slot separator as taught by Williams in order to dynamically allocate bandwidth to a user on demand.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,763,025 discloses time division multiplexing over broadband modulation method and apparatus;

US 6,567,429 discloses wide area multi-service broadband network;

US 2003/0097661 discloses time shifted TV over IP network system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Taranina whose telephone number is (571) 270-1085. The examiner can normally be reached on Mon-Fri (alternative Fri off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MT  
21 Sep 2006



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SUPERVISORY PATENT EXAMINER